

## LISTING OF CLAIMS

1. (Currently Amended) A user interface for displaying hierarchical data, comprising:

a first-level display for displaying one or more first-level data items in the hierarchical data, the hierarchical data being associated with a markup language;

at least one field associated with each first-level data item, each field configured to display a first-level data sub-item ~~associated with the first-level data item~~ or a subordinate data indicator, the first-level data sub-item being associated with the first level data item in the at least one field; and

wherein the presence of the subordinate data indicator in a field indicates that the field has subordinate data associated with the field, the subordinate data being subordinate to the first-level data items in the hierarchical data.

2. (Original) The user interface as recited in claim 1, wherein the subordinate data further comprises one or more second-level data items in the hierarchical data.

3. (Original) The user interface as recited in claim 1, wherein the subordinate data indicator is an actuatable icon that, when actuated, displays the subordinate data.

4. (Original) The user interface as recited in claim 3, wherein the subordinate data, when displayed, is displayed in a format similar to a format in which the first-level data is displayed.

1           5.     (Original) The user interface as recited in claim 3, wherein the  
2 subordinate data, when displayed, is displayed so that the first-level data  
3 associated with the subordinate data indicator is still visible on the display.

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5           6.     (Original) The user interface as recited in claim 1, wherein the  
6 hierarchical data further comprises extensible markup language (XML) data.

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8           7.     (Original) The user interface as recited in claim 1, wherein:  
9 the first-level display is in a table format having rows and columns;  
10 each row represents a first-level data item; and  
11 each column represents a field.

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13           8.     (Currently Amended) A graphical user interface, comprising:  
14 a first table that displays first-level data items in hierarchical data  
15 associated with a markup language, the first table having a row for each first-level  
16 data item and one or more columns, each column representing a first-level data  
17 sub-item associated with the first-level data item of a corresponding row;

18 a second table that displays second-level data items in the hierarchical data,  
19 the second table having a row for each second-level data item and one or more  
20 columns, each column representing a second-level data sub-item associated with  
21 the second-level data item of a corresponding row; and

22 an actuatable first-level subordinate data indicator displayable in a column  
23 of a row in the first table that, when actuated, causes at least a portion of the  
24 second table to be displayed.

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2 9. (Original) The graphical user interface as recited in claim 8, wherein  
3 the first-level subordinate data indicator is only displayed when there is  
4 subordinate data associated with the first-level data sub-item associated with the  
5 row and column in which the first-level subordinate data indicator is displayed.  
6

7 10. (Original) The graphical user interface as recited in claim 8, wherein  
8 the row of the first table that contains the actuated subordinate data indicator is  
9 visible on the interface when the second table is displayed.  
10

11 11. (Original) The graphical user interface as recited in claim 8, further  
12 comprising:

13 a third table that displays third-level data items in the hierarchical data, the  
14 third table having a row for each third-level data item and one or more columns,  
15 each column representing a third-level data sub-item associated with the third-  
16 level data item of a corresponding row; and

17 an actuatable second-level subordinate data indicator displayable in a  
18 column of a row in the second table that, when actuated, causes at least a portion  
19 of the third table to be displayed.  
20

21 12. (Original) The graphical user interface as recited in claim 11,  
22 wherein the row of the second table that contains the second-level subordinate data  
23 indicator is visible when the third table is displayed.  
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1           13.   (Original) The graphical user interface as recited in claim 8, wherein  
2 the hierarchical data is extensible markup language (XML) data.

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4           14.   (Cancel)

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6           15.   (Currently Amended) One or more computer-readable media  
7 containing computer-executable instructions that, when executed on a computer,  
8 perform the following steps:

9           displaying one or more first-level data items included in a hierarchical data  
10 set, the hierarchical data set being associated with a markup language;

11           displaying at least one field associated with each first-level data item, each  
12 field configured to display a first-level data sub-item associated with the first-level  
13 data item;

14           displaying a subordinate data indicator in a field if the field in which the  
15 subordinate data indicator has subordinate data associated with the field that is  
16 subordinate to the first-level data items in the hierarchical data.

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18           16.   (Original) The one or more computer-readable media as recited in  
19 claim 15, wherein the hierarchical data set is an extensible markup language  
20 (XML) data set.

1  
2 17. (Original) The one or more computer-readable media as recited in  
3 claim 15, wherein the subordinate data indicator is actuatable and computer-  
4 executable instructions further display the subordinate data when the subordinate  
5 data indicator is actuated.

6  
7 18. (Original) The one or more computer-readable media as recited in  
8 claim 17, wherein the data item associated with the subordinate data indicator and  
9 the fields associated with the data item are visible when the subordinate data is  
10 displayed.

11  
12 19. (Original) The one or more computer-readable media as recited in  
13 claim 15, further comprising:

14 displaying a table having rows and columns;

15 wherein the first-level data items are each displayed in a row of the table;

16 and

17 wherein the first-level sub-items are each displayed in a column of the  
18 table, the column in which a first-level sub-item is displayed being associated with  
19 a row that is associated with a first-level data item that corresponds to the first-  
20 level sub-item.

21  
22 20. (Original) The one or more computer-readable media as recited in  
23 claim 15, wherein the subordinate data further comprises one or more second-level  
24 data items in the hierarchical data.

1           21.   (Original) The one or more computer-readable media as recited in  
2 claim 20, wherein:

3           the first-level data items, the first-level data sub-items and the data  
4 indicator are displayed in a first format; and

5           the subordinate data is displayed in the first format.

6  
7           22.   (Original) The one or more computer-readable media as recited in  
8 claim 20, wherein:

9           the first-level data items, the first-level data sub-items and the data  
10 indicator are displayed in a first format; and

11          the subordinate data is displayed in a second format.

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2 23. (Currently Amended) One or more computer-readable media  
3 containing computer-executable instructions that, when executed on a computer,  
4 perform the following steps:

5 displaying a first table that shows one or more first-level data items  
6 included in a hierarchical data set, the hierarchical data set being associated with a  
7 markup language, the first table having a row corresponding to each first-level  
8 data item and one or more columns that each correspond to a first-level data sub-  
9 item associated with the first-level data item of a corresponding row;

10 displaying at least a portion of a second table that shows one or more  
11 second-level data items in the hierarchical data set, the second table having a row  
12 corresponding to each second-level data item and one or more columns that each  
13 correspond to a second-level data sub-item associated with the second-level data  
14 item of a corresponding row;

15 displaying one or more actuatable subordinate data icons, each in a column  
16 of a row in the first table that, when actuated, causes at least a portion of the  
17 second table to be displayed; and

18 wherein the actuatable subordinate data icon is only displayed if there is  
19 second-level data that corresponds with the first-level data sub-item associated  
20 with the column in which the actuatable subordinate data icon is displayed.

21  
22 24. (Original) The one or more computer-readable media as recited in  
23 claim 23, wherein a row in the first table that contains the actuated subordinate  
24 data icon remains visible after the second table is displayed.  
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1           25.   (Original) The one or more computer-readable media as recited in  
2 claim 23, further comprising computer-executable instructions that, when executed  
3 on a computer, perform the following steps:

4           displaying at least a portion of a third table that shows one or more third-  
5 level data items in the hierarchical data set, the third table having a row  
6 corresponding to each third-level data item and one or more columns that each  
7 correspond to a third-level data sub-item associated with the third-level data item  
8 of a corresponding row;

9           displaying one or more actuatable subordinate data icons in the second  
10 table, each in a column of a row in the second table that, when actuated, causes at  
11 least a portion of the third table to be displayed; and

12           wherein the actuatable subordinate data icon is only displayed in the second  
13 table if there is third-level data that corresponds with the second-level data sub-  
14 item associated with the column in which the actuatable subordinate data icon is  
15 displayed.

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17           26.   (Original) The one or more computer-readable media as recited in  
18 claim 25, wherein a row in the second table that contains the actuated subordinate  
19 data icon remains visible after the third table is displayed.  
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2 27. (Currently Amended) A method for displaying hierarchical data in  
3 hypertext markup language (HTML), comprising:

4 traversing the hierarchical data, the hierarchical data being associated with  
5 a markup language;

6 building a visual representation for each level of the hierarchical data in  
7 HTML;

8 storing the visual representations;

9 displaying the visual representation for at least a first level of the  
10 hierarchical data; and

11 displaying an actuatable subordinate data indicator that, when actuated,  
12 displays a second level of the hierarchical data, the second level of the hierarchical  
13 data being subordinate to the first level of the hierarchical data.

14  
15 28. (Original) The method as recited in claim 27, wherein the at least a  
16 first level of the hierarchical data further comprises a top level of the hierarchical  
17 data.

18  
19 29. (Original) The method as recited in claim 27, wherein the traversing  
20 the hierarchical data further comprises traversing the hierarchical data in a depth-  
21 first manner.

22  
23 30. (Original) The method as recited in claim 27, wherein the visual  
24 displays are built for all of the hierarchical data before any of the displays are  
25 displayed.

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2 31. (Original) The method as recited in claim 27, further comprising:  
3 displaying the visual representation for at least a second level of the  
4 hierarchical data; and

5 displaying a second-level actuatable subordinate data indicator that, when  
6 actuated, displays a third level of the hierarchical data, the third level of the  
7 hierarchical data being subordinate to the second level of the hierarchical data.  
8

9 32. (Original) The method as recited in claim 27, wherein the  
10 hierarchical data is extensible markup language (XML) data.  
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12 33. (Currently Amended) A method for displaying hierarchical data in  
13 hypertext markup language (HTML) comprising:

14 building a first-level display for a first level of data in the hierarchical data,  
15 the hierarchical data being associated with a markup language, the first-level  
16 display having one or more actuatable subordinate data indicators that are  
17 displayed for each data item that has second-level data associated with it;

18 displaying the first-level display;

19 when a subordinate data indicator is actuated, building a second-level  
20 display for the second level of data in the hierarchical data that is associated with  
21 the data item corresponding to the subordinate data indicator that has been  
22 actuated; and

23 displaying the second-level display.  
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1           34. (Original) The method as recited in claim 33, wherein the  
2 hierarchical data is extensible markup language (XML) data.

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4           35. (Original) The method as recited in claim 33, further comprising:  
5 including a second-level subordinate data indicator in the second-level  
6 display for each data item that has third-level data associated with it;  
7 when a second-level subordinate data indicator is actuated, building a third-  
8 level display for the third level of data in the hierarchical data that is associated  
9 with the data item corresponding to the second-level subordinate data indicator  
10 that has been actuated; and  
11 displaying the third-level display.

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13           36. (Cancel)

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15           37. (Original) The method as recited in claim 33, further comprising:  
16 determining if the second-level display has been previously created; and  
17 creating the second-level display only if the second-level display has not  
18 previously been created.

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20           38. (Original) The method as recited in claim 37, wherein the  
21 determining if the second-level display has been previously created further  
22 comprises referencing a data path that indicates whether the second-level display  
23 has been previously created.

1           39. (Original) The method as recited in claim 37, wherein the  
2 determining if the second-level display has been previously created further  
3 comprises referencing a data path that indicates whether the second-level display  
4 has previously been created, and wherein the method further comprises appending  
5 information to the data path when the second-level display is created if the second-  
6 level display has not previously been created, the information indicating that the  
7 second-level display has been created.